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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,986	01/10/2006	Takeshi Kobayashi	126576	7116
25944 7590 05/22/2008 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
WILSON, GREGORY A				
ART UNIT		PAPER NUMBER		
3749				
MAIL DATE		DELIVERY MODE		
05/22/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/563,986

**Applicant(s)**

KOBAYASHI, TAKESHI

**Examiner**

Gregory A. Wilson

**Art Unit**

3749

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11 and 14-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-28 is/are allowed.
- 6) ☒ Claim(s) 11 and 14-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 11 and 14-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Watanabe et al (5,482,558) in view of Buckley et al (6,488,497)**. **Watanabe et al** discloses a vertical boat (3) for heat treatment and includes a top plate (31), a bottom plate (32), four circular arc shaped column members (41-44), a plurality of grooves (220) in the column members (therefore being arc-shaped and cylindrically disposed) so as to create a ledge which supports the wafer by way of a supporting part (5A, 5B) (SEE Figure 5) which horizontally supports a silicon wafer (W) and is in the shape of a circular arc having a center angle as shown in Figure 5 as clearly supporting the applicants limitation of being between 20-100 degrees, the space between column members (42 & 43) and (41 & 44) serve as vents when the supporting parts are positioned in the structure. **Watanabe et al** does not specifically recite that the supporting part and the column member is formed of a monolithic piece of a same material (ie: an integral structure). **Buckley et al** teaches that it is common knowledge in the art to make a vertical ceramic wafer boat with integrally formed arcuate wafer support arms (SEE column 5, lines 20-30). It would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which the subject matter pertains to have assembled the structure of Watanabe et al from a single monolithic structure as is well known in the art and taught by Buckley et al for the purpose of minimizing the potential for generating damaging particles by having a plurality of parts which could affect the surface of the wafers.

**Claims 20-25** rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (5,482,558) in view Buckley et al (6,488,497) and further in view of Nakai et al (6,474,987). Watanabe et al Buckley et al teaches the applicants primary inventive concept, but does not specifically teach a supporting surface that is sloped nor having a edge which is chamfered. Nakai et al teaches in Figures 4 & 5 and column 3, lines 44-57, a supporting surface of a supporting part being chamfered and the supporting part having downward sloped surfaces. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains to have modified the supporting surface of Watanabe et al in view of Buckley et al to include a sloped surface of Nakai et al for the purpose of preventing a flaw on the backside of a wafer, additionally, it would have been obvious to modify the supporting surface of Watanabe et al to have a chamfered edge so as not to cause a point of contact.

***Allowable Subject Matter***

**Claims 26-28** are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory A. Wilson whose telephone number is (571)272-4882. The examiner can normally be reached on 7 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gregory A. Wilson/  
Primary Examiner, Art Unit 3749  
May 19, 2008